

ABSTRACT OF THE DISCLOSURE

A power semiconductor device includes a first semiconductor layer of non-doped $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 = x = 1$), and a second semiconductor layer of non-doped or n-type $\text{Al}_y\text{Ga}_{1-y}\text{N}$ ($0 = y = 1, x < y$) disposed on the first semiconductor layer. Source and drain electrodes are disposed separately from each other, and electrically connected to the second semiconductor layer. A gate electrode is disposed on the second semiconductor layer between the source and drain electrodes. An insulating film covers the second semiconductor layer between the gate and drain electrodes. A first field plate electrode is disposed on the insulating film and electrically connected to the gate electrode. A second field plate electrode is disposed on the insulating film and electrically connected to the source electrode.